

4. A method according to claim 2 including the step of conveying the shot of molten diecasting metal in a smooth curve through an angle of approximately  $90^{\circ}$  while it is within the transition channel.

5. A method according to claim 2 wherein the transition channel is split so that a first part thereof is located by the fixed die and a second part thereof is located by the moving die, the method including the step of:

controlling the temperature of the second part of the transition channel independently of the temperature of the moving die so as to ensure that the freeze-point of the diecasting metal occurs within the transition channel after a shot.

9. A die set according to claim 6 wherein the cross-sectional area of the sprue channel reduces uniformly in the direction of melt flow so that the velocity of the melt increases uniformly within the sprue channel during a shot.

10. A die set according to claim 6 wherein the cross-sectional area of the portion of the melt path which comprises the sprue channel, the transition channel and the runner channel reduces uniformly in the direction of melt flow so that the velocity of the melt increases uniformly within said melt path.

11. A die set according to any claim 6 wherein said angle is substantially  $90^{\circ}$ .

12. A die set according to claim 6 having an ejector pin slidably located within one of said dies for movement into the transition channel so as to be adapted to eject diecasting metal that solidifies within the transition channel after a shot and after separation of the movable and fixed dies.

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15. A sprue insert-set according to claim 13 wherein said angle is substantially  $90^\circ$  and the first curved groove subtends substantially  $90^\circ$ .

16. A sprue insert-set according to claim 13 wherein the sprue body insert includes temperature sensor means.

17. A sprue insert-set according to claim 13 wherein the sprue body insert includes thermal insulation encompassing the heater means so as to mitigate the loss of heat from the sprue insert to the fixed die when the sprue insert-set is in use.

18. A sprue insert-set according to claim 13 including:  
a sprue tip insert adapted for mounting within the moving die, said tip insert having an inner end forming said second curved groove.

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20. A sprue insert-set according to claim 18 wherein said tip insert includes temperature sensor means and thermal insulation adapted to mitigate thermal transfer between said second insert and the moving die.

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